

IN THE APPLICATION

OF

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FOR A

AUTOMATED WEB RANKING BID MANAGEMENT ACCOUNT SYSTEM

# AUTOMATED WEB RANKING BID MANAGEMENT ACCOUNT SYSTEM

## CROSS-REFERENCE TO RELATED APPLICATION

5 This application is a continuation-in-part of application  
Serial No. 10/307,314, filed December 02, 2002, which claims the  
benefit of U.S. Provisional Patent Application Serial No.  
60/336,741, filed November 30, 2001.

## BACKGROUND OF THE INVENTION

### 1. FIELD OF THE INVENTION

10 The present invention relates to software for evaluating and  
controlling an online advertising campaign, and more particularly  
to an automated web ranking bid management system for subscriber  
control of the advertising bidding process associated therewith.

### 2. DESCRIPTION OF THE RELATED ART

15 Web sites providing search services have offered advertisers  
significant reach into the Internet audience and have given  
advertisers the opportunity to target consumer interests based on  
keyword or topical search requests. In a web-based search on an  
Internet search engine, a user enters a search term comprising one  
or more keywords, which the search engine then uses to generate a

listing of web pages in real time that the user may access via a hyperlink. While some search engines rely upon algorithms that select and organize the listing of web pages based on multiple criteria, such as keyword density and keyword location, others allow advertisers themselves to influence their placement in search result listings so that their listings are prominent in searches that are relevant to the content of their website. These search engines, referred to as pay-per-click search engines, require advertisers to pay for each click-through referral generated through the search result lists from the search engine. Thus, advertisers have an incentive to select and bid on those search keywords that are most relevant to their web site offerings. The higher an advertiser's position on a search result list, the higher likelihood of a referral.

Advertisers may also choose banner advertising to promote and increase their web exposure. In the banner advertising model, advertisers purchase space on the pages of popular commercial web sites. The advertisers usually fill this space with a colorful graphic, known as a banner, advertising their own web site. The banner may act as a hyperlink that a visitor may click on to access the site. Banner advertising on the Internet is typically priced on an impression basis, with advertisers paying for any

exposure of the banner ad to potential customers, i.e., each time the web page with the banner is viewed. While banners may be displayed at every page access, on search engines they may be targeted to search terms. Banner advertising may also be sold on  
5 a fixed fee basis.

Online advertising may also be done through simple links on another site's web page, whether a search engine or not, and through affiliate programs in which the advertiser pays the host featuring the advertiser's link either a click-through rate or a  
10 commission based upon sales resulting from a click-through from the host's page.

Pay-per-click search engines, portals, or any web site that is paid to display a listing, referred to herein as Online Marketing Media ("OMM"), typically report back data on the effect  
15 of that advertising. Most OMM's have a monitoring interface, such as a URL Position Manager<sup>TM</sup>, which allows an advertiser to constantly monitor, update, and/or reposition a listing. However, advertisers typically make several bids per day on a large number of search terms. Consequently, monitoring a particular listing to  
20 determine when and where advertising is effective and which search terms are producing the most results can become burdensome. In addition, manually raising and lowering bids generally takes a

substantial amount of time, and the positioning resulting from these bids is not guaranteed for any period. Furthermore, with manual manipulation of bids, bid gaps are difficult to recognize and control. A bid gap occurs when advertisers are bidding more than they must for a certain position or search result ranking. In these cases, advertisers often pay more per click than is necessary to maintain optimal ranking or premium placement in the directory search engines. The result is that many sites do not draw nearly the amount of traffic that they could with continually optimized bid positioning management. Therefore, an automated bid monitor becomes essential. Some Web-based tools profess to help the advertiser protect their ranking and positioning problems through bid monitoring and bid management. These bid monitors help identify bid gaps, but do nothing to automatically correct bid gaps or to determine if and when search terms are effective in directing Internet traffic to an advertiser's web site. Consequently human attention and input is required.

Prior patents relating to Internet advertising do not disclose an automated bid monitoring system. Exemplary patents include U.S. Patent Publication Number 2001/0051911, published December 13, 2001 (a bidding method used to prioritize advertising and search result listings delivered to users of the Internet);

U.S. Patent Publication No. 2001/0051940, published December 13, 2001 (a system for influencing a position on a search result list generated by a computer network search engine in which a predetermined number of search listings are selected according to bid amount for display to the searcher); U.S. Patent No. 6,078,866, issued June 20, 2000 to Buck et al. (an Internet site searching and listing service based on monetary ranking of site listings); U.S. Patent No. 6,269,361, issued July 31, 2001 to Davis et al. (a system and method for influencing a position on a search result list through a continuous online bidding process).

None of the above inventions and patents, taken either singly or in combination, is seen to describe the instant invention as claimed. Thus an automated web ranking bid management account system solving the aforementioned problems is desired.

#### SUMMARY OF THE INVENTION

The present invention relates to an automated web ranking system. The system monitors online marketing media ("OMM"), such as search engines, portals, affiliate programs, and other websites displaying listings or banner advertisements to determine the effectiveness of an online marketing campaign. If search terms are used to market an advertiser's product or services, the system determines the search term's effectiveness by collecting and

analyzing data relating to the number of impressions, the number of clicks, and the number of resulting sales generated by a search term at a given time period. By assigning a keycode to a user when the user initially enters a search term, the system is able to track an online order or sale to a particular marketing campaign.

The present invention also provides for tracking a telephonic order or purchase to a particular marketing campaign by incorporating a content management system within the advertiser's web site. The tracking keycode which is assigned to an Internet user triggers the content management system to display a telephone number per web site or per web page which is unique to that keycode. The system can thereby track each telephone call made to a telephone number displayed on the advertiser's web site or web page to a particular keycode, and consequently to a particular marketing campaign.

Based on the data collected and the parameters which the advertiser provides relating to the advertiser's economic factors, the system calculates a maximum acceptable bid for each keycode. The system monitors the web for competitor's bids on an advertiser's search term and places bids which fall below the maximum acceptable bid. The system automatically reduces or eliminates bid gaps which would otherwise occur when an advertiser bids more than they must for a certain positioning.

The system also monitors the effectiveness of online marketing that is not linked to search terms, such as banner

advertising that is displayed at every page access. A keycode is assigned to the user upon accessing the OMM that is paid to display the banner advertisement. The system collects and analyzes data relating to the number of impressions, the number of clicks, and the number of resulting sales per unit time generated by the search engine or website which displays the banner advertising.

Accordingly, it is an object of the present invention to provide a method for automatically controlling a subscriber's URL Position Management<sup>TM</sup> accounts.

It is a further object of the invention to provide advertisers with a means for setting maximum bid amounts and desired ranking for the search terms on which they bid while optimizing the bids to the indicated or desired positions, or as near to them as possible, while staying under the maximum bid amount desired for each term.

Still a further object of the invention is to provide a means for maintaining a bid schedule set by the advertiser, including real time updating.

It is a further object of the present invention to automatically seek out "bid gaps" in an advertiser's account and to automatically lower them to a preset level slightly above the nearest competitive bid during prescribed time periods of a day, a month or a year.



Yet another object of the invention is to allow a subscriber to receive the same amount of clicks or traffic as the higher bidder, at a significant cost savings.

5 Another advantage of the present invention is to allow a subscriber to effectively control their advertising budget based upon effectiveness of a search term to generate Internet traffic to an advertiser's web site.

10 Still another object of the present invention is to allow the advertiser to monitor the bids and bidding behavior of the advertiser's competitors and adjust bids and times of bidding based upon the observed bidding behavior of the advertiser's competitors.

15 Yet another object of the present invention is to allow a subscriber advertiser to automatically and continually monitor and change bids in its pay-per-click search engine account based upon preset parameters established by the subscriber advertiser, with such parameters including maximum bid amount, dynamic bid schedule, as well as competitor bid behavior.

20 Still another object of the present invention is to provide a means of preventing overbidding for key words in pay-per-click accounts.

Another object of the present invention is to provide an ability to market a business based upon sales conversion rates and cost of customer acquisition within given time intervals by real time strategy implementation, using historic data, bid updating and bid adjustment.

It is yet another object of the present invention to provide the subscriber advertiser with an ability to track competitor behavior, providing a historic data base which can be used by the subscriber advertiser to adjust strategy, either by outbidding or underbidding competitors as desired.

It is an object of the invention to provide improved elements and arrangements thereof for the purposes described which is inexpensive, dependable and fully effective in accomplishing its intended purposes.

These and other objects of the present invention will become readily apparent upon further review of the following specification and drawings.

#### BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a block diagram of a typical personal computer system for carrying out the present invention.

Fig. 2 is a block diagram showing the interaction of web sites and other entities in the automated web ranking bid management account system according to the present invention.

Fig. 3 is a flowchart depicting how insertion orders are prepared in the system according to the present invention.

Fig. 4. is a flowchart exemplifying how a data set is analyzed under a first set of parameters according to the present invention.

Fig. 5 is a flowchart exemplifying how a data set is analyzed under a second set of parameters according to the present invention.

Fig. 6 is a flowchart exemplifying how a data set is analyzed under a third set of parameters according to the present invention.

Similar reference characters denote corresponding features consistently throughout the attached drawings.

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention relates to a web-based computer system for maximizing the effectiveness of advertising through banner ads, click-through search engines, links, affiliate programs and other advertising media. The system is designed to operate on one or more computers. While mainframes or minicomputers may be used, the system performs quite adequately using personal computer

systems. While the details of the computer system may vary and still be within the scope of the claimed invention, Fig. 1 shows a typical personal computer system for carrying out the present invention.

5 The personal computer system is a conventional system which includes a personal computer **10** having a microprocessor **12** (viz., an Intel Pentium III), including a central processing unit (CPU), a sequencer, and an arithmetic logic unit (ALU), connected by a bus **13** or buses to an area of main memory **14** for executing program  
10 code under the direction of the microprocessor **12**, main memory including read only memory (ROM) **16** and random access memory (RAM) **18**. The personal computer **10** also has a storage device **20** and a data communications device **22**, such as a modem or other means for connecting to a network **24**, such as a modem, Ethernet, ISDN, DSL,  
15 or other devices for connecting to a network **24**, and particularly to the Internet, either directly or through an Ethernet or LAN, preferably using a high speed connection, such as T3, ISDN, or DSL.

20 The personal computer system also comprises peripheral devices, such as a display monitor **26**, a printer **28**, and one or more data input devices **30** such as a keyboard or mouse.

It will be understood that the term storage device refers to a device or means for storing and retrieving data or program code on any computer

readable medium, and includes a hard disk drive, a floppy drive or floppy disk, a compact disk drive or compact disk, a digital video disk (DVD) drive or DVD disk, a ZIP drive or ZIP disk, magnetic tape and any other magnetic medium, punch cards, paper tape, memory chips, or any other medium from which a computer can read stored data.

The client personal computer **10** will be equipped with a web browser, such as Netscape Navigator, Microsoft's Internet Explorer, or other browser software executing in main memory, while server computers will be equipped with web server software capable of delivering web pages in hypertext markup language (HTML) to client computers using hypertext transfer protocol (HTTP).

The automated web ranking system includes a web-based software program. The web-based program code executes in the main memory **20** under the direction of the microprocessor **12**, and includes Web server software which enables the system to maintain a database of search terms relating to an advertiser's service or product; track Internet user activity generated to an OMM and an advertiser's website when an Internet user conducting a web-based search on the OMM enters at least one search term relating to a service or product of the advertiser; track Internet user activity generated to an OMM and an advertiser's website when an Internet user views the advertiser's banner advertisement on

the OMM or accesses the advertiser's website by clicking on the banner advertisement displayed on an OMM; vary content displayed on an advertiser's website based on keycode; acquire data relating to the Internet user activity; sort the acquired data to remove duplicate information; compile a master data set from said data wherein data values are arranged according to time of Internet user activity and a designated primary key; determine sufficiency of data based on specified conditions; calculate an acceptable new maximum bid for the search term; determine whether said maximum bid is a justified expense for the advertiser in light of profit determining factors; determine whether to maintain, modify, or remove a bid for a search term; retrieve information on competitor's bids; identify desired ranking; prepare an insertion order with an appropriate bid for achieving the desired ranking; and automatically upload the insertion order to an OMM.

The system can determine and maximize the effectiveness of advertising through banner ads, click-through search engines, links, affiliate programs and other advertising media. For online advertising that is associated with search terms, the program maintains a database of search terms, which it uses to market an advertiser's product or services through an OMM. The effectiveness of using a particular search term, banner

advertisement or other online marketing tool is determined by collecting and analyzing data relating to the number of impressions, the number of clicks, and the number of resulting sales generated by the search term, banner advertisement, or other online marketing tool at a given time period. The system is particularly designed to analyze data per time period as the number of impressions (number of times the web page bearing the advertising is viewed), the number of clicks (and particularly a click-through, i.e., where the user clicks on the link and does not terminate the process until the advertiser's page is reached), and the number of resulting sales at differing times of day, month, or year.

**Data Collection:** The data is collected as shown in Fig. 2. When an Internet user **32** logs onto an OMM **34**, such as a pay-per-click search engine, and enters one of the advertiser's designated search terms, the resulting display of listings will include the advertiser's listing. This display of the advertiser's listing, referred to as an impression, as well as the time and date of its occurrence will be recorded in the OMM database **36**. Alternatively, the Internet user **32** may log onto a different type of OMM **34** such as a website that is paid to display an advertiser's banner advertisement. The display of the advertiser's banner advertisement when the Internet user **32**



accesses the paid website, also referred to as an impression, and the time and date of its occurrence are also recorded in the OMM database 36.

If the user 32 then proceeds to click on the advertiser's listing or banner advertisement the time and date of the click as well as the cost of the click, if any, to the advertiser will also be recorded in the OMM database 36. The user 32 will then be directed to a tracking engine 38. The tracking engine 38 may be provided by the client advertiser's website 42 or by a third party. The tracking engine 38 identifies the user's browser by any suitable means known in the art, including but not limited to, setting a cookie on browsers that do not have cookies intentionally disabled, or setting a session I.D. The tracking engine 38 then records this information in a tracking engine database 40. The tracking engine 38 also records within its database 40 the time and date at which the user 32 clicked upon the client advertiser's listing or banner ad, and which OMM 34 the user 32 was directed from. As is known in the art, the tracking engine also provides the user 32 with a tracking URL with which to access the client advertiser's website. The tracking URL has embedded within it a keycode to help identify the OMM website 34 which was used to direct the user 32 to the advertiser's web site 42, the search term which was used at the



OMM website **34**, and/or other information relating to the activity of the user **32** on the OMM website **34** or advertiser's website **42**. The tracking engine **38** will then redirect the user **32** to the advertiser's website **42** at the indicated URL.

5       Once the user has accessed the advertiser's website **42**, additional information is recorded in the advertiser's database **44**, such as time and date of visit, as well as keycode information. If a user **32** takes an action on the advertiser's website **42** during the initial visit or any subsequent visit, such as completing a form or purchasing a product or service, an additional record is added to the advertiser's database **44** containing the time and date of the action and the amount of purchase if a purchase was made, or the name of the item requested if a form was completed. If the user **32** takes an action on the advertiser's website **44**, a confirmation page containing a 1 x 1 pixel transparent GIF image is also sent to the tracking engine **38** so that the tracking engine **38** may match up this information with the user's session I.D. and cookie information which was previously recorded in the database. The confirmation page provides the tracking engine **38** with information that was recorded for the user **32** in the advertiser's database **44**. In this manner, the action of the user **32** may be tracked to the search term and OMM **34** that was

initially used to refer the user to the advertiser's web site  
42.

Some consumers may prefer not to order merchandise by  
online forms, but will call a telephone number posted on the  
5 website 42 to order merchandise by telephone. Therefore, in  
order to determine the effectiveness of the online advertising,  
the advertiser's website 42 is also configured to track orders  
or purchases made by telephone by employing a content management  
system. As is generally known in the art, a content management  
10 system can be used to vary content displayed on a given web site  
based upon information provided by the user or gathered by the  
website. In the present invention, the content management  
system may display a unique telephone number per web site or  
web page, so that the telephone number may be used as the  
15 keycode in lieu of a tracking URL, or may be uniquely associated  
with the tracking URL. The keycode can also trigger the display  
of multiple telephone numbers on different pages throughout a  
web site. The displayed telephone numbers can be unique per  
page without limit. Since each telephone number corresponds  
20 with a unique keycode, telephonic orders or purchases may be  
tracked to a particular keycode, and therefore to a particular  
marketing campaign.

Conventional call center software is employed to record the time and date of a phone call and the telephone number that was called. This information is forwarded to the advertiser's database 44. The name of the user 32 and any additional information relating to the telephone call that may be acquired by the person answering the telephone call is also entered into the advertiser's database 44. In the event that the telephone call results in a sale, the associated data may be entered into the advertiser's database manually or automatically by the content management software by linking the order information to the keycode, i.e., the unique telephone number.

The content management system may also be used to vary the display of other information on an advertiser's web site, such as street address or email address, in a similar manner.

The system collects data from the OMM database 36, the tracking engine database 40, and the advertiser's database 44 once the OMM 34 begins to receive impression data. The frequency of the data collection can vary and may depend on how frequently data becomes available at the OMM database 36.

**Optimizing Insertion Orders:** The system enables advertisers to maximize their return on advertising spent (ROAS). ROAS is typically dependent on an advertiser's profits from selling a particular service or item. Referring to Fig. 3,

initially, it is necessary for an advertiser to provide the system with some preliminary parameters 50 which reveal economic factors particular to an advertiser, such as an initial ROAS value which the advertiser determines must be targeted for, a monetary budget within which the system may work, and reasonable estimate of the expected clicks or actions by a user for a given time period. The system requests data 52 from the OMM, the tracking engine, and the advertiser's website as soon as possible after impression data is created in the OMM database. The system then receives data sets 54 from the databases. Once the data is received, the system sorts and compiles the data sets 56. The data is sorted by a primary key and according to time periods in which an event or impression took place. All duplicate information is discarded during the sorting process. The primary key is preferably the designated keycode.

Once the data is sorted, a master data set is compiled 58. The system then conducts an analysis to identify well defined datasets 60 per keycode. Well defined data includes a dataset wherein the number of actions recorded for a specified time period exceed a minimum threshold value, because only those keycodes which lead to an acceptable number of user actions can yield accurate data regarding the effectiveness of a particular marketing campaign. If the data is not well defined, then the

bid is not changed **62**. If the data is considered to be well defined, the system must calculate a new acceptable maximum bid **64**. This can be done by first calculating a new ROAS value, which is the amount of sales divided by the cost to advertise per keycode per unit of time. Then the following formula is used:

$$\text{New ROAS/Goal ROAS} * \text{current Max bid} = \text{New Max Bid.}$$

The goal ROAS value is a value which the advertiser initially provided and the current maximum bid is either designated by the advertiser or by the system if a similar analysis has already taken place for a different time period, as will be discussed later.

The system then determines whether or not the keycode can be deemed a good buy **66**, or specifically whether or not the newly calculated maximum bid is a justified expense for the advertiser in light of profit determining factors which will be discussed in Figs 4-6. If the keycode is considered a good buy, the bid is either increased, maintained, or decreased **68**.

However, if the keycode is linked to a banner advertisement at set cost(not shown in figure), a determination is made to keep the banner advertisement on. If the keycode is not a good buy, the bid is either maintained, decreased, or removed **70**.

However, if the keycode is linked to a banner advertisement at

set cost (not shown in figure) a determination is made to turn the banner advertisement off. This information is then compiled 72 by the system.

The system then logs into the advertiser's OMM account to  
5 determine competitor's bid amounts 74. The system can obtain competitor bid information, including the ranking, URL, and cost per click of the competitor, directly from the OMM if the OMM displays such information, otherwise competitor bid information and/or ranking can be obtained thru screen scraping. Screen  
10 scraping refers to a process known in the art, wherein data is retrieved via a software designed for the purpose of removing data from web sites. Once the system has access to information regarding competitor bids, the system locates the highest ranking competitor having a bid that is less than the newly  
15 calculated max bid. The system then prepares an insertion order 76 which reflects a bid that is a minimal value, such as one cent above that competitor's bid for a particular search term for a particular time period. The insertion order is then uploaded to the OMM 78. If the competitor then proceeds to  
20 outbid the system by one cent to regain its ranking, the system will prepare an insertion order bidding one cent above that bid and this process will continue until the newly calculated max

bid value is reached. At this time the system will drop its bid to the original bid value.

In an alternative embodiment, where competitor bid information is not available, the system may obtain the desired ranking by submitting a bid to the OMM which falls below the newly calculated max bid. The system will note the ranking obtained and will continuously rewrite the insertion order to reflect varying bids until the desired ranking is achieved.

**Analyzing Data Sets:** While there are many ways to determine whether or not a keycode represents a good buy, a few examples are delineated in Figs. 4-6. A discussion of some terms and concepts used in the system's analysis of keycode data sets and which are necessary for understanding Figs. 4-6 follows.

Many variables are used in the figures to represent changing values of parameters. These variables are defined below:

R1 is a value determined by the advertiser as an acceptable minimum for ROAS;

R2 is a value determined to be an ideal or acceptable maximum for ROAS in light of profits made on a particular product or service and in light of required costs for advertising and other expenditures. If R2 is



set too high, for example, what remains may be insufficient to cover advertising costs.

$\alpha$  is a minimum threshold value of actions taken by Internet users;

5         $X$  is a minimum acceptable number of visits;

$A_c$  is the number of Internet user visits in a given data set;

10         $\Pi$  is some maximum acceptable number of visits which can be expected during a given time period. If the keycode is newly introduced to the system,  $\Pi$  is generally given a value of three visits per hour, or some acceptable maximum number of visits which can be expected during a given time period. If the dataset related to a keycode has been analyzed before,  $\Pi$  represents the highest number of sales or actions per keycode per time period;

15         $C$  is an expected value of visits that would result in at least some actions taken by the Internet user. For example, if conversion rate is 2% for 100 visits, then  $C$  must be 50;

$S$  is a minimal number of clicks which are likely to result in no actions;

20         $Y$  is an ideal or an acceptable maximum number of visits.



If a keycode is being analyzed by the system for the first time, the minimum and maximum acceptable values for visits and actions, as well as the range of acceptable ROAS values are typically provided by the advertiser based on economic factors particular to the advertiser. These values can also be based on competitor data or the value can simply be estimated. After the system gathers sufficient data for that keycode, these estimated values can be adjusted accordingly. For example, once the system has acquired sufficient data, it can determine the conversion rate per keycode i.e. the ratio of user actions to user visits per time and adjust the initial values accordingly. Thus, a site that has a conversion rate of 1% will require a higher number of user visits to yield the desired ROAS than a site that converts at 10%. Similarly, a site that has a conversion rate of 10% and a standard deviation of +/- 5% will require less visits than the site that converts at 10%.

On some occasions when a search term does not yield favorable data, the term is still maintained in light of its computational linguistics value. A term is given computational linguistics value if it is a brand term or is reflective of advertiser name or if the advertiser's website offers a one of a kind product or service and little or no competition exists.

Premium placement is considered to be a particular ranking on a search result listing which delivers a high volume of traffic to the

advertiser's web site, such as ranking in the first page of search result listings or the top three listings.

As previously mentioned and reflected again in Fig. 4, once a master dataset is compiled, the system must identify keycodes having well-defined data, i.e. datasets where the number of actions which occur at the advertiser's website are greater than  $\alpha$  82. The system then determines whether the number of visits to a website are greater than or equal to X 84. If the number of visits to a website are below X, the system then determines whether or not the ROAS is greater than or equal to R2 86. If the number of visits to a website is below X and ROAS is greater than or equal to R2 86, the keycode is designated green 90 and the search term is set to premium placement or one S.D.

(standard deviation) above the current max bid 92. If the number of visits to a website are below X 84 and less than R2 86, the keycode is designated grey 88 and no action is taken.

If the number of visits is greater than or equal to X 84, and ROAS is determined to be greater than or equal to R2 94, the keycode is designated green 96. If the new calculated max bid is greater than the current max bid 98, the max bid is raised 102, if it is not, the max bid is lowered 100 if the keycode has low computational linguistics value and premium placement would not be lost.

If the number of visits is greater than or equal to X **84**, and ROAS is less than R2 **94** and greater than or equal to R1 **104**, then the keycode is coded grey **110** and no action is taken **112**.

If the number of visits is greater than or equal to X **84** and ROAS is less than R2 **94** and lower than R1 **104**, the keycode is designated orange **106**. If the orange coded keycode has premium placement, then it is lowered to non-premium placement. If the keycode does not have premium placement, the bid is lowered to the OMM's minimum bid requirements if it has some computational linguistics value, otherwise it is removed **108**. The system then compiles all keycode designations requiring a bid change **114**. Information on competitor's bids is retrieved **116** as previously discussed and an insertion order is prepared **118**. The insertion order is then uploaded to the OMM **120**.

Fig. 5 depicts how the system may analyze alternative data set possibilities to determine whether or not a bid needs to be modified. The first step depicted in Fig. 5 is to isolate all keycodes where transactions are greater than 0 and less than or equal to a value designated as  $\Pi$  **122**. If the number of visits is less than C and the ROAS is greater than or equal to R2 **124**, the keycode is designated green **126** and no action takes place **128**. If the number of visits is less than C and ROAS is less than R2 **130** the keycode is designated grey **132** and again no

action takes place **134**. If the number of visits is less than or equal to Y and ROAS is greater than or equal to R2 **136**, the keycode is designated light green **138** and no action takes place **142**. If the number of visits is less than or equal to Y and ROAS is less than R2 and greater than or equal to R1 **140**, the keycode is designated grey and no action takes place **132**. If the number of visits is less than or equal to Y and ROAS is less than R1 **144**, the keycode is designated orange **146** and if the search term has premium placement, the bid is lowered below premium placement **148**. If the orange coded keycode is already ranked below premium placement, then the bid is lowered to the minimum bid acceptable by the OMM or the term is removed (after considering computational linguistic value of the term). If the number of visits is greater than or equal to Y and if ROAS is greater than or equal to R2 **150**, the keycode is designated green **152** and the max bid is adjusted after considering computational linguistic value and premium placement. If the number of visits is greater than or equal to Y and ROAS is greater than or equal to R1 but less than R2 **156**, then the keycode is designated grey **158** and no action takes place **160**. If the number of visits is greater than or equal to Y and if ROAS is less than R1 **162**, the keycode is designated red **164** and the bid is removed from OMM or lowered to the minimum bid acceptable by the OMM **166**.

Fig. 6 depicts how the system may analyze additional data set possibilities to determine whether or not a bid needs to be modified. The first step is to isolate all keycodes where the transactions are equal to 0 **168**. If the number of visits are greater than or equal to S and if the listing has premium placement **170**, then no action takes place **172**. If the number of visits is less than or equal to S and if the listing does not have premium placement **174**, then the bid should be modified to place the listing at premium placement **176**. If the number of visits are greater than or equal to S and less than X **178**, the keycode is designated white **180** and no action takes place **182**. If the number of visits is greater than or equal to X and less than C **184**, the keycode is designated grey **186** and no action takes place **188**. If the number of visits is greater than or equal to C and less than Y **190**, the keycode is designated orange **192**. If the listing is in premium placement, the bid should be lowered below the calculated max bid to non-premium placement **194**. If the listing is not in premium placement, the bid should be lowered to the minimum bid acceptable by the OMM or the bid should be removed based on computational linguistic value of the search term **194**. If the number of visits is greater than or equal to Y **196**, the keycode should be designated red **198**. If the listing is in premium placement, the bid should be lowered below

the calculated max bid to non-premium placement **194**. If the listing is not in premium placement, the bid should be lowered to the minimum bid acceptable by the OMM or the bid should be removed based on computational linguistic value of the search  
5 term **194**.

It is to be understood that the present invention is not limited to the embodiments described above, but encompasses any and all embodiments within the scope of the following claims.